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27 January 1959

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MEMORANDUM FOR: Deputy Director (Plans)

SUBJECT: Use of CHALICE Photography for Control  
Extension and Geodetic Purposes

REFERENCES: (a) TCS-4165-58, dated 15 December 1958  
(b) DPG-6332, dated 19 December 1958  
(c) Memorandum of Understanding Concerning  
Proposed Plan for Procuring Calibration  
Information, dated 14 January 1959

1. After consultation between representatives of the Aeronautical Chart and Information Center and PIC it is possible to answer your questions in reference (a).

2. In arriving at these answers, the attached memorandum of understanding (reference 'c') between CIA/PIC and ACIC concerning a proposed plan for Processing Calibration Information was drawn up. A few pertinent PIC observations on the memorandum are as follows:

a. ACIC agrees to supply calibration information determined through this program to those users who require it. A continued lack of rapport between ACIC (or the AF) with the other services appears to still exist. For example, when it was pointed out to ACIC representatives that Army Map Service and Navy Hydrographic office personnel are presently working at PIC on other aspects of the use of CHALICE materials for geodetic purposes, the ACIC people declined the opportunity to talk with them, even though it means that the work so accomplished would possibly have to be done twice.

b. PIC will still, even under the agreement, have to train some ACIC people and provide the use of PIC measuring equipment and working space for three ACIC people. It was explained that similar equipment is in use at SAC, but ACIC still prefers to work here.

c. PIC can furnish the information and material listed in the agreement without undue strain on the facilities.

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4. Paragraph 4 of the agreement was written with the idea that ACIC has some money available to spend on this program, and by judicious application of this money through the proper Operations people might accelerate the reconstruction of dismantled cameras and the exposure of stellar negatives by Hyeon personnel. This is an operation currently being pursued by Hyeon, but only on a time-available basis. PIC has not attempted to have this accelerated as we are unable at present to reduce the data from negatives on hand, because of our current work load.

3. Specific answers to your questions:

a. The cost of the operation is small, and apparently the Air Force is willing to underwrite it.

b. For camera focal length calibration, stellar exposures must be made with each camera. This data must be reduced mathematically. This will be done at PIC on the electronic computer. Distortion and interlock angle calibration has yet to be investigated, but the material furnished to ACIC by PIC will enable ACIC to perform this investigation. Once the feasibility has been proven, this matter will be approached as an entirely separate problem, as there are other pertinent considerations.

c. At the present, or until the feasibility of performing distortion and interlock calibration is proven, it is anticipated that there will be no impact on operations at

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d. No additional CHALICE clearances are required for the portion of the program planned to be undertaken, the focal length calibration and investigation of other calibration possibilities. Three ACIC people presently hold CHALICE clearances. They will do the planned work.

e. No additional requests for TALENT clearances are expected from ACIC beyond those currently planned, should the calibration program prove the possibility of geodetic exploitation of TALENT materials. Undoubtedly other military mapping and charting agencies, AMS and Navy HQ particularly would request additional clearances once the program was a

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proven success. At that time, there would probably be requests also for additional cleared working areas. No estimate of these factors is being made at this time.

4. It is PIC's desire to physically relocate the pursuit of this problem at the earliest convenient date. After training of ACIC people is accomplished at PIC, estimated to take about 2 weeks, the only operation which will remain at PIC will be the measurement of stellar images and the computation. A continued attempt to move the measurement operation to SAC will be made. However, the computation will probably continue to be done at PIC. This is a small problem, since the necessary computer program for reduction of the data has been accomplished.

5. By way of summary then, it is estimated that we can provide some of the geodetic help so desperately needed by ACIC for a reasonable amount of continued support from PIC's Technical Intelligence Services Division. No additional CHALICE clearances would be initially required and there would be no impact on operations at [ ] pending ACIC's investigation of distortion and interlock angle calibration data. If this investigation proves the value of this data, some future request from ACIC would probably involve more CHALICE clearances. ACIC does have some funds for dismantled camera reconstruction and the stellar exposure programs at KYCON if operations had no objection and a positive interest in these results. Despite Air Force's continued apparent intention of going after the calibration-control extension problem unilaterally, it would be willing to share the calibration results with those users who require them. We would continue to try to convince ACIC that the measurement operation should be moved to SAC and out of our crowded working areas. We are able to handle their machine computations for data reduction without too much strain.

6. Before confirming any of these arrangements with ACIC we would have to have your endorsement or the opportunity to meet with your people and offer such additional details or clarifications as you might require.

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ARTHUR C. LUNDAHL  
Director,

Photographic Intelligence Center

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